

Abstracts

These selected abstracts and titles from the world literature are arranged in the following sections:

Syphilis and Other Treponematoses

(Clinical and Therapy; Serology and Biological False Positive Phenomenon; Pathology and Experimental)

Gonorrhoea

(Clinical; Microbiology; Therapy)

Non-specific Genital Infection

Reiter's Disease

Trichomoniasis

Candidosis

Genital Herpes

Other Sexually-Transmitted Diseases

Public Health and Social Aspects

Miscellaneous

Syphilis and other treponematoses (*Clinical and therapy*)

Syphilis—The Placenta and the Fetus

BENIRSCHKE, K. (1974)

Amer. J. Dis. Child., **128**, 142

Primary Syphilis of the Rectum

GLUCKMAN, J. B., KLEINMAN, M. S., and MAY, A. G. (1974) *N.Y. St. J. Med.*, **74**, 2210

Syphilis Then and Now

MARLOW, F. W. JR. (1974) *J. Amer. med. Ass.*, **230**, 1320

Syphilis (*Serology and biological false positive phenomenon*)

Studies of the *Treponema pallidum* Immobilizing Activity in Normal Human Sera.

I. A Method HEDERSTEDT, B.

(1974) *Acta path. microbiol. scand., Sect. B.* **82**, 185

The author has investigated factors which influence the immobilization of *Treponema pallidum* by normal unheated human serum. Immobilization by syphilitic sera is slow and is preceded by a lag phase; with high concentrations of normal serum it starts almost at once and is complete within 2 hours. The process is slower in the presence of large numbers of treponemes. It is affected by the temperature of incubation; in the presence of high serum concentrations it is maximal at 27 to 35°C. and no immobilization was seen

within 2 hours at 19°C. An ionic strength of 0.10 to 0.14 was found optimal in the presence of low serum concentration; values above this decreased the immobilization. Addition of magnesium within the range 0.01 to 0.04 M Mg^{++} enhanced immobilization by normal serum but the addition of calcium did not.

The antibody concerned in normal serum may be a 19 S globulin and the reaction seems to resemble the bactericidal effect of normal serum against other organisms. When conditions are standardized in the light of these findings, estimations of the immobilizing effect of normal sera are thought to be as reproducible as those of the TPI test with syphilitic sera.

A. E. Wilkinson

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A Factor in Guinea-pig Serum with Accelerating Effect on Immune Immobilization of *Treponema pallidum* (IAF)

MÜLLER, F., and SEGERLING, M.

(1974) *Immunology*, **27**, 33

Immobilization of *Treponema pallidum* *in vitro* depends on the consecutive action of specific antibody, complement, and lysozyme. Guinea-pig serum used as a source of complement may have high haemolytic but poor immobilizing activity and *vice versa*. The authors have shown that the euglobulin fraction of guinea-pig serum contains an immobilizing accelerating factor (IAF) which enhances immune immobilization of *T. pallidum* *in vitro*.

IAF was separated from guinea-pig serum by precipitating the euglobulin

fraction by dialysis against 0.005 M phosphate buffer, pH 5.4. Purification was effected by column chromatography successively on Sephadex G 200/G 100, DEAE cellulose, CM cellulose, and finally again on DEAE cellulose. The original paper should be consulted for the operating conditions.

The purified product from five isolations had a protein content of 0.06 to 0.12 mg./ml. and gave a single band on polyacrylamide gel electrophoresis. The sedimentation rate was 8.1 S and the approximate molecular weight 150,000. It is distinct from any of the known complement subunits and from lysozyme. In the presence of these, IAF increased the number of immobilized treponemes in a test system from 1.6 to approximately 3.0×10^5 /ml. Its action is thought to depend on previous activation of the haemolytic system and to occur before lysozyme acts on the treponemal cell wall. An IAF-like protein has also been obtained from human serum.

A. E. Wilkinson

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

How Many is Enough ? A Statistical Study of Proficiency Testing of Syphilis Serology Specimens

CICCHETTI, D. V.,

KEITGES, P., and BARNETT, R. N.

(1974) *Health Lab. Sci.*, **11**, 299

***Treponema pallidum* Haemagglutination Test (TPHA) for the Specific Sero-Diagnosis of Syphilis**

YOGESWARI, D., and

SOWMINI, C. N. (1974) *Indian J.*

Derm. Venereol., **40**, 185

Syphilis (Pathology and Experimental)

Purification of *Treponema pallidum* from Infected Rabbit Tissue: Resolution into Two Treponemal Populations

BASEMAN, J. B., NICHOLS, J. C., RUMPP, J. W., and HAYES, N. S. (1974) *Infect. and Immun.*, **10**, 1062

Virulent *Treponema pallidum* organisms, extracted from infected rabbit testes, were subjected to velocity sedimentation in discontinuous gradients of Hypaque, a high density, low viscosity material. After centrifugation of extracts at 20°C. for 45 min. at 100,000 × g., treponemes separated into two distinct bands based upon their relative velocities, although some variation was observed in the densities of the two bands and the number of treponemes per band. Rabbit tissue components sedimented more rapidly. Dark-field and electron microscopy of preparations after velocity sedimentation indicated that treponemes retained general structural characteristics and no tissue contamination occurred in the treponemal fractions. Purification of treponemes in Hypaque resulted in their loss of motility and infectivity based upon animal inoculation. Antigenicity with respect to reactivity with antibody was preserved as shown by the high fluorescence intensity of treponemes in the fluorescent treponemal antibody adsorption test.

Authors' summary

Placental Abnormalities of Congenital Syphilis

RUSSELL, P., and ALTSHULER, G. (1974) *Amer. J. Dis. Child.*, **128**, 160

In this paper from Cincinnati, the authors state that the incidence of congenital syphilis has risen recently, and that certain of the modern immunofluorescent serological techniques capable of detecting congenital syphilis in the neonate can be performed at only a few centres. Although the combination of the fluorescent treponemal antibody absorption test with assessment of IgM antibodies seems a satisfactory method of diagnosing active neonatal syphilis, evidence has been reported for and against this test's absolute specificity and reliability.

The authors consider that examination of the placenta has a useful place in the diagnosis of congenital syphilis. The anamnesis of the pregnancies of three mothers, the infants' neonatal life, their signs, and serological and radiological findings are given. The placental lesions found were:

- (1) A focal, proliferative villitis;
- (2) Endovascular and perivascular proliferation in villous vessels, ultimately leading to vascular obliteration;
- (3) Relative immaturity of villi, either focal or diffuse.

It was found that the Warthin-Starry method of staining spirochaetes gave quicker and more reliable results than the technique of Levaditi, but because spirochaetes may be difficult to find, it was considered that demonstration of these organisms should not be considered as a prerequisite to the placental diagnosis.

[This paper has some importance because of the small number of mothers who for several reasons escape orthodox ante-natal medical care and subsequently bear infants with congenital syphilis.]

Michael Waugh

Gonorrhoea (Clinical)

Gonorrhoea in the Male

PETZOLDT, D. (1974) *Hautarzt*, **25**, 486

Diagnosis of Gonorrhoea in Women by Culture. Choice of Sampling Sites

ØDEGAARD, K., and GUNDERSEN, T. (1974) *T. norske Laegeforen*, **94**, 2392

Gonorrhea in Children and Adolescents—Current Review

LITT, I. F., EDBERG, S. C., and FINBERG, L. (1974) *J. Pediat.*, **85**, 595

Gonorrhea in Upstate New York

HINMAN, A. R. (1974) *J. Amer. vener. Dis. Ass.*, **1**, 29

Economic Consequences of Gonorrhea in Women.

Experience from an Urban Hospital RENDTORFF, R. C., CURRAN, J. W., CHANDLER, R. W., WISER, W. L., and ROBINSON, H. *J. Amer. vener. Dis. Ass.*, **1**, 40

Gonorrhoea (Microbiology)

Development and Passive Transfer of Immunity to Gonococcal Infection in Guinea-Pigs

SCALES, R. W., and KRAUS, S. J. (1974) *Infect. and Immun.*, **10**, 1040

Gonococcal infections of relatively long duration were produced in guinea-pigs with minimal infective doses ranging from 10¹ to 10² colony-forming units. After spontaneous eradication and upon rechallenge with > 10⁸ gonococcal colony-forming units, guinea-pigs were refractory to infection. Serum from these guinea-pigs was bactericidal *in vitro* and protected virgin guinea-pigs from *in vivo* challenge. The 7 S peak, but not the 19 S peak, from gel-filtered immune serum demonstrated both bactericidal and passive protective properties. *In vitro* bactericidal activity of whole immune serum and its 7 S peak was abolished after heating at 56°C. for 30 min. The *in vivo* protective ability of the 7 S peak was not abolished after heating.

Authors' summary

Scanning Electron Microscope Study of *Neisseria gonorrhoeae*

KRAUS, S. J., and GLASSMAN, L. H. (1974) *Appl. Microbiol.*, **27**, 584

Morphological studies utilizing various microscopy techniques have aided in our understanding of the gonococcus and gonorrhoea. In this study scanning electron microscopy was used to study differences in virulent (colony types 1 and 2) and avirulent (colony types 3 and 4) gonococci relative to colony appearance, patterns of growth in liquid media, and surface features of individual cocci. Colony types of virulent gonococci are smaller in diameter but have a higher evaluation than those of avirulent mutants. Colony type 2 has a convex under-surface that is associated with surface pitting of solid media. When the colonies are grown in liquid media, various degrees of autoagglutination are observed; this is most pronounced with type 2 and least evident with type 4. Although pili may be involved in this phenomena, other mechanisms must be employed, since type 3 gonococci that lack pili autoagglutinate. Pili are seen on types 1 and 2 and are absent from types 3 and 4. They appear as individual threads radiating

from the bacteria or as bundles of pili attaching adjacent cocci. Another extracellular structure consists of small spherical bodies that can coat the bacteria surface, attach to pili, or exist free from other bacterial components. These spheres are least evident with type 4. The gonococcal surface is pebbly with multiple sulci.

Authors' summary

The Human Fallopian Tube: A Laboratory Model for Gonococcal Infection

WARD, M. E., WATT, P. J., and ROBERTSON, J. N. (1974) *J. infect. Dis.*, **129**, 650

In this study from the University Department of Medicine, Southampton, England, the authors investigated the ability of colony type I *Neisseria gonorrhoeae* to infect human Fallopian tube in both perfusion and organ-culture systems. Scanning and transmission electronmicrographs were taken after perfusion with gonococci, and 3 hours afterwards showed microvilli adherent to the bacteria with pili running over the membrane of the host cell. Later electronmicrographs showed that after attachment organisms penetrated the mucosa of the Fallopian tube. Gonococci entered the epithelial cells and large numbers of organisms were seen in these cells which lysed shedding gonococci into the deeper tissues. In addition organisms could penetrate along intercellular spaces. Invaded epithelial cells were also exfoliated, thinning the mucosa and widening the intercellular spaces so facilitating invasion by gonococci. The organisms formed foci of infection in the sub-mucosal tissues and spread outwards in these tissues. Ciliated cells were not invaded by gonococci but were damaged and exfoliated, suggesting the possibility of a diffusible cytotoxin.

These electronmicroscopical findings are comparable with the known histopathology of acute gonorrhoea. The perfusion system allows the Fallopian tube mucosal surface to be exposed to realistically small numbers of gonococci and the bacteria must adhere to the mucosa despite a fluid flow. The organ-culture system provides less realistic conditions for attachment.

R. N. T. Thin

Comparison of Three Serological Tests in Gonococcal Infection

RODAS, C. U., and RONALD, A. R. (1974) *Appl. Microbiol.*, **27**, 695

857 sera from female patients who had cervical cultures for routine screening for gonorrhoea were tested by the microflocculation test (MFT), indirect fluorescent antibody test (IFAT), and complement-fixation test (CFT). A few of the patients were known gonorrhoea contacts or had symptoms of gonorrhoea. In addition, sera from healthy staff, known cases of gonorrhoea, meningococcal carriers, and patients with meningococcal disease were tested. Of the 857 patients, 106 gave positive cervical cultures for gonorrhoea and of these 75.4 per cent. were reactive by the MFT, 69.8 per cent. by the IFAT, and 31.1 per cent. by the CFT. Of the 751 culture-negative patients, the sera were reactive in 11.6 per cent. with the MFT, 17.4 per cent. with the IFAT, and 10.5 per cent. with the CFT. Further study of the false positive reactors showed that eleven of the 86 MFT reactors had had recent gonorrhoea and ten gave a positive cervical culture for gonorrhoea on the second test. The corresponding numbers for the other two tests were lower. The MFT was negative in 25 children with positive nasopharyngeal cultures for meningococci, while three were reactive with IFAT and four with CFT.

It is concluded that the MFT compares favourably with the other tests and has also the advantage of simplicity.

G. W. Csonka

Development of a Defined Minimal Medium for the Growth of *Neisseria gonorrhoeae*

LA SCOLEA, L. J., JR., and YOUNG, F. E. (1974) *Appl. Microbiol.*, **28**, 70 (*Clinical Microbiology and Immunology*)

This investigation describes the development of a solid and a liquid medium (Gonococcal Genetic Medium; GGM) which support the rapid growth of 41 gonococcal clinical isolates and laboratory strains with a minimum number of nutritional components. The complete medium contains minimal salts, eight amino acids, two nitrogen bases, vitamins, coenzymes, key metabolic intermediates, and some miscellaneous components. Results indicate that

GGM can be modified and simplified even further than we described. In liquid GGM, several gonococcal strains grew logarithmically after a 2- to 3-h lag period with generation times ranging from 72 to 115 min, reaching optical densities of 175 to 320 Klett units in the presence of seven amino acids and in the absence of a CO₂ atmosphere. The development of a solid and a liquid defined minimal medium such as GGM should greatly broaden the avenues of experimentation for biochemical genetic studies with *N. gonorrhoeae*, especially gonococcal genetic transformation. *N. gonorrhoeae* can be classified into eight major and minor phenotypic groups, depending on its growth responses on GGM to just five amino acids: cysteine and cystine, arginine, proline, isoleucine, and serine. Such results demonstrate the feasibility of using GGM as a simple, sensitive, rapid probe for investigating the epidemiological patterns of gonorrhoea.

Authors' summary

Evaluation of Media used for Cultures of *N. gonorrhoeae* and Comparison of Commercial and Laboratory Prepared Supplements

CHANDLER, R. W., RENDTORFF, R. C., CURRAN, J. W., and KELLOGG, D. S., JR. (1974) *J. Amer. vener. Dis. Ass.*, **1**, 14

Evaluation of Commercially Supplied Transgrow and Amies Media for the Detection of *Neisseria gonorrhoeae*

CHAPEL, T., SMELTZER, M., PRINTZ, D., DASSEL, R., and LEWIS, J. (1974) *HLth Lab. Sci.*, **11**, 28

Gonogrow, an Improved Selective Medium for the Isolation of *Neisseria gonorrhoeae*

CHEN, N. S., HIPPE, S. S., LAWTON, W. D., and GAAFFAR, H. A. (1974) *HLth Lab. Sci.*, **11**, 173

Characterization of Plasmid Deoxyribonucleic Acid from *Neisseria gonorrhoeae*

MAYER, L. W., HOLMES, K. K., and FALKOW, S. (1974) *Infect. and Immun.*, **10**, 712

Studies on Gonococcus Infection. VI. Electron Microscopic Study on *in vitro* Phagocytosis of Gonococci by Human Leukocytes

SWANSON, J., SPARKS, E., and ZELIGS, B. (1974) *Infect. and Immun.*, **10**, 645

Growth Inhibition among Strains of *Neisseria gonorrhoeae* due to Production of Inhibitory Free Fatty Acids and

Lysophosphatidylethanolamine: Absence of Bacteriocins

WALSTAD, D. L., REITZ, R. C., and SPARLING, P. F. (1974) *Infect. and Immun.*, **10**, 481

Genetic Transformation of Biosynthetically Defective *Neisseria gonorrhoeae* Clinical Isolates CATLIN, B. W. (1974) *J. Bact.*, **120**, 203

Glucose Metabolism in *Neisseria gonorrhoeae* MORSE, S. A., STEIN, S., and HINES, J. (1974) *J. Bact.*, **120**, 702

Gonorrhoea (Therapy)

Multiple Antibiotic Resistance in *Neisseria gonorrhoeae* MAIER, T. W., BEILSTEIN, H. R., and ZUBRZYCKI, L. (1974) *Antimicrob. Agents Chemother.*, **6**, 22

The authors, working in Philadelphia, U.S.A., investigated the sensitivity of 125 isolates of *Neisseria gonorrhoeae* to six antibiotics. They used a quantitative disc sensitivity technique which, according to a previous publication, gave reproducible results closely correlated with those of the standard plate-dilution method. Using the results given by this disc technique, the degree of association between sensitivities to any two of the antibiotics was determined. The correlation between sensitivity to penicillin and tetracycline was almost as good as that between penicillin and ampicillin. The lowest correlation was between erythromycin and chloramphenicol. Gonococci with greatest partial resistance to either penicillin, tetracycline, erythromycin, or chloramphenicol were likely to show partial resistance to the other three drugs. Approximately 40 per cent. of gonococci classified as 'most resistant' (resistance exceeding the partial resistance of 75 per cent. of all isolates) to one antibiotic were also 'most resistant' to the three others.

Increase in partial resistance was produced *in vitro* by sub-culture on plates containing increasing concentrations of penicillin or tetracycline. The mutants so produced showed

increased partial resistance to penicillin, tetracycline, erythromycin, and chloramphenicol.

These results are interpreted as providing evidence for the existence of a common mechanism for the development of multiple antibiotic resistance in the gonococcus.

R. N. T. Thin

Single-dose Oral Therapy for Uncomplicated Gonorrhoea: Comparison of Amoxicillin and Ampicillin given with and without Probenecid KARNEY, W. W., TURCK, M., and HOLMES, K. K. (1974) *J. infect. Dis.*, **129**, Supplement, S250

In this study from Seattle 298 infected patients with uncomplicated gonorrhoea were treated with varying single dose oral therapies. This involved a comparison of amoxicillin and ampicillin given with and without probenecid according to a randomized double-blind study design.

The authors concluded that a single oral dose of 3g. ampicillin given without probenecid is not to be recommended for the treatment of uncomplicated gonorrhoea. Ampicillin given orally in a dose of 2 to 3.5 g. with probenecid is highly effective for the treatment of uncomplicated ano-genital gonococcal infection, but is not recommended for oro-pharyngeal gonococcal infection. A single 3 g. oral dose of amoxicillin was effective in 95 per cent. of men and women treated for ano-genital gonococcal infection. A total failure rate of 33 per cent. among oro-pharyngeal gonococcal infections treated by one of these single-dose oral regimes indicates that a major drawback to the use of single doses of amoxicillin or ampicillin for uncomplicated gonorrhoea lies in their limited effect on a concomitant oro-pharyngeal infection.

J. R. W. Harris

Treatment of Uncomplicated Gonorrhoea in Women with a Single Oral Dose of Amoxicillin

GURWITH, M. J., MCGINNIS, S., RONALD, A. R., and HENRY, R. (1974) *J. infect. Dis.*, **129**, Supplement, S258

In this paper from Winnipeg, amoxicillin was used to treat uncomplicated gonorrhoea. 3 g. amoxicillin plus 0.5 g.

probenecid gave a cure rate of 95.4 per cent. The authors found that two of the four patients who had concomitant pharyngeal gonorrhoea were therapeutic failures. They conclude that, while the single-dose therapy of 3 g. amoxicillin plus 0.5 g. probenecid is an excellent oral therapy for ano-genital gonorrhoea, those patients who have concomitant pharyngeal gonorrhoea may well be failures. They feel that should antibiotic resistance of gonococci continue to increase, the superior levels achieved with amoxicillin may prove important in choice of drug.

J. R. W. Harris

Gentamicin in Sexually-Transmitted Disease LAWRENCE, A. G., PHILLIPS, I., and NICOL, C. S. (1974) *Postgrad. med. J.*, **50** (Suppl. 7) 33

122 male patients with uncomplicated gonorrhoea were treated with a single dose of gentamicin. Of nine given 160 mg. there were two failures. Of 111 given 240 mg., twelve failed to respond. Two were given 320 mg., and one of them failed. Peak blood levels of gentamicin were estimated in fifty patients. The overall rate of post-gonococcal non-specific urethritis was 45 per cent.

Authors' summary

Oral Amoxicillin in Acute Uncomplicated Gonorrhoea

BAYNE, L., TAMBLYN, D., RUEDY, J., and OGILVIE, R. I. (1974) *Canad. med. Ass. J.*, **111**, 685

Treatment of Acute Gonorrhoea with Spectinomycin

Hydrochloride LAUGIER, P., and ORUSCO, M. (1974) *Dermatologica (Basel)*, **148**, 292

Cefazolin in the Treatment of Gonococcal Urethritis HEYM, H.

(1974) *Infect. Dis. Rev.*, **3**, 243
(10th Infectious Diseases Symposium, May, 1973, Wilmington, Delaware, ed. W. J. Holloway)

Treatment of Gonorrhoea with Bactrim (Therapie der Gonorrhö mit Bactrim) GILLIET, F. (1974) *Dermatologica (Basel)*, **148**, 298

Non-specific genital infection

Antibodies to TRIC Agents in Tears and Serum of Naturally Infected Humans

HANNA, L., JAWETZ, E., BRIONES, O. C., *et al.* (1973) *J. infect. Dis.*, **127**, 95

Antibodies to TRIC agents were found in the serum of 78 per cent. of Tunisian children with severe trachoma. Young Navajo children with mild trachoma rarely had antibodies. Older children with similar disease had serum antibodies in 48 per cent. of cases, but almost never had antibodies in tears. Adults with severe oculo-genital TRIC infection had antibodies in the serum in 89 per cent. and in tears in 58 per cent. Antibodies are rarely found in tears unless they are also present in the serum (where their titres are usually higher).

Daniel Gold

In vitro and *in vivo* Activity of Spectinomycin against the Genital Mycoplasmas

LEE, Y.-H., ALPERT, S., BAILEY, P. E., DUANCIC, A. and McCORMACK, W. M. (1974) *J. Amer. vener. Dis. Ass.*, **1**, 37

Susceptibility of strains of *T. mycoplasmas* and *M. hominis* to spectinomycin hydrochloride was determined using a broth dilution microtitre technique. The median MIC (minimum inhibitory concentration) for both *T. mycoplasmas* and *M. hominis* was 4 µg./ml. (range 2 to 16 µg./ml.). Cultures for genital mycoplasmas were obtained from patients who received either aqueous procaine penicillin G or spectinomycin hydrochloride for the treatment of gonorrhoea. *T. mycoplasmas* were isolated from the post-treatment urethral culture of seven (31.8 per cent.) of 22 men who were treated with spectinomycin and whose pretreatment cultures contained these organisms compared with 21 (77.8 per cent.) of 27 men who were colonized with *T. mycoplasmas* and who received penicillin ($P < 0.005$). In women, treatment with spectinomycin did not appear to reduce vaginal colonization with *T. mycoplasmas*. However, *M. hominis* was isolated from post-treatment vaginal cultures of only twelve (66.7 per cent.) of eighteen colonized women who received spectinomycin compared with 28 (97 per

cent.) of twenty-nine colonized women who were treated with penicillin ($P < 0.025$). *Authors' summary*

Isolation of *Chlamydia trachomatis* by Use of 5-iodo-2-deoxyuridine-treated Cells

WENTWORTH, B. B., and ALEXANDER, E. R. (1974) *Appl. Microbiol.*, **27**, 912

Irradiated McCoy cells have provided a useful technique for the isolation of *Chlamydia trachomatis* strains, among which are found the aetiological agents of trachoma, inclusion conjunctivitis, and lymphogranuloma venereum. Because irradiation is not always available, 5-iodo-2-deoxyuridine (IUDR) treatment of cells was investigated as a substitute procedure. IUDR-treated cells were found to be as sensitive to *C. trachomatis* infection as were irradiated McCoy cells. Stock chlamydial strains gave similar titres of iodine-stained inclusions in either system. When cells treated with IUDR were compared with irradiated cells for the isolation of *C. trachomatis* from clinical specimens, five of 138 specimens yielded isolates in IUDR-treated cells not found in irradiated ones, and one isolate was obtained from irradiated but not from IUDR-treated cells. In those 56 cases, in which inclusions were seen in both systems, there were significantly more inclusions in IUDR-treated than in irradiated cells. Although this series of cultures is too small to determine whether IUDR-treated cells are superior to irradiated ones for the isolation of *C. trachomatis*, the data indicate that IUDR treatment is at least equally effective.

Authors' summary

Neutralization of TRIC Organisms by Antibody Enhancement by Antisera prepared against Immunoglobulins

BLYTH, W. A., and TAVERNE, J. (1974) *J. Hyg. (Lond.)*, **72**, 129

Spectinomycin and Doxycycline in the Treatment of Acute Venereal Disease: Their Influence on Genital Mycoplasmas and on the Serum Bactericidal Effect

GNARPE, H. (1974) *Microbios*, **10**, 247

Epididymitis after the Luminal Spread of NSU *Corynebacteria* and Gram-Negative Bacteria from the Fossa Navicularis

FURNESS, G., KAMAT, M. H., KAMINSKI, Z. C., and SEEBODE, J. J. (1974) *Invest. Urol.*, **11**, 486

Current Concepts: Nonspecific Urethritis

KAUFMAN, R. E. and WIESNER, P. J. (1974) *New Engl. J. Med.*, **291**, 1175

Reiter's disease

Reiter's Syndrome in a Child

VERGNANI, R. J., and SMITH, R. S. (1974) *Arch. Ophthalmol.*, **91**, 165

Morbus Reiter KAULEN-BECKER, L. (1974) *Z. Hautkr.*, **49**, 1003

Biologic Significance of HL-A W27 in Rheumatic Disease

METZGER, A. L., MORRIS, R. I., and BLUESTONE, R. (1974) *J. Rheumatol.*, **1**, 247

The Histocompatibility Antigen (HL-A 27) and its Relation to Disease

BREWERTON, D., CAFFREY, M., NICHOLLS, A., and JAMES, D. C. O. (1974) *J. Rheumatol.*, **1**, 249

Ankylosing Spondylitis: Family Studies and HL-A 27 Antigen Distribution

ESPINOZA, L., OH, J. H., KINSELLA, E. D., STACEY, C. H., OSTERLAND, C. K., and DOVE, F. B. (1974) *J. Rheumatol.*, **1**, 254

Reduced Prevalence of HL-A Antigen W27 in Black Females with Ankylosing Spondylitis

SWEZEY, R. L., ZUCKER, L. M., and TERASAKI, P. I. (1974) *J. Rheumatol.*, **1**, 260

HL-A 27 in Reiter's Syndrome and Psoriatic Arthritis: A Genetic Factor in Disease Susceptibility and Expression

McCLUSKY, O. E., LORDON, R. E., and ARNETT, F. C., JR. (1974) *J. Rheumatol.*, **1**, 263

Association of HL-A 27 and AJ in Juvenile Rheumatoid Arthritis and Ankylosing Spondylitis

STURROCK, R. D., DICK, H. M., HENDERSON, N., GOEL, G. K., LEE, P., DICK, W. CARSON, and BUCHANAN, W. W. (1974) *J. Rheumatol.*, **1**, 269

Candidosis

Influence of Androgen and Estrogen on Delayed Skin Test Reactivity to *Candida albicans*

RIFKIND, D., and FREY, J. A. (1974)
Infect. and Immun., **10**, 971

Genital herpes

Genital Herpesvirus Infection in Pregnancy

AMSTEY, M. S., and MONIF, G. R. G. (1974) *Obstet. and Gynec.*, **44**, 394

This paper from the Departments of Obstetrics and Gynaecology, University of Rochester School of Medicine, New York, presents a series of 29 cases of herpes genitalis in pregnant women with characteristic lesions confirmed by virus isolation. Of these, fifteen had had active herpes genitalis at some time during their pregnancies, but there was no clinical or virological evidence of HSV infection at term; all had vaginal delivery, and no neonatal morbidity due to HSV infection was observed. Fourteen patients were actively shedding virus at the time of delivery. Two of these were delivered vaginally, and although HSV was isolated from the maternal cervix and vulva the infants were unaffected. The remaining twelve patients were delivered by caesarean section. There was one neonatal death from disseminated HSV infection in a baby delivered 24 hours after the membranes ruptured. A second baby, delivered 70 hours after the membranes ruptured, also by caesarean section, developed scalp lesions and evidence of spasticity on the third postpartum day, and despite vigorous treatment was left with residual neurological damage. The remaining twelve infants were normal.

The authors review the available data and suggest that patients who develop herpetic vulvovaginitis during pregnancy are followed up with virus isolation techniques. If HSV disappears before term, vaginal delivery should be allowed. However, if lesions and active virus shedding are present at term, caesarean section should be considered before, or not less than 4 hours after, the membranes rupture, in order to reduce an expected neonatal mortality rate of up to 40 per cent. They further suggest that amniocentesis be done during the

third trimester in patients with evidence of active herpes genitalis to rule out an intrauterine infection of the foetus. If virological evidence of this were found, heroic deliveries by caesarean section would not be indicated.

D. C. Beckingham

Orogenital Transmission of Herpes Simplex Type 1

EVARD, J. R. (1974) *Obstet. and Gynec.*, **44**, 593

An 18-year-old girl was admitted to hospital with an acute herpetic vulval infection. Although she denied sexual intercourse, she admitted oro-genital activity, and her sexual partner was found to have an acute oral herpetic infection.

The virus recovered from the man had the morphological characteristics of HSV Type 1 and was typed as such by inhibition of the direct haemagglutination test. Antibody studies indicated that both patients had a primary infection with HSV Type 1.

The author states that there has been no previous report of HSV Type 1 spread to the genitals by oro-genital sexual activity.

J. T. Wright

Recovery of Herpes Simplex Virus from Human Sacral Ganglions

BARINGER, J. R. (1974)
New Engl. J. Med., **291**, 828

This study was undertaken in the Neurology Research Laboratory, Veterans' Administration Hospital, San Francisco. The second, third, and fourth sacral ganglions, mid-thoracic ganglions, and trigeminal ganglions were excised from male cadavers within 24 hours of death. The tissue was minced and cultured in human embryonic lung cells for periods of up to 11 weeks. Supernatant fluids from cultures showing a cytopathic effect were assayed for virus by inoculation on to cell monolayers and the identification of herpes simplex virus (HSV) confirmed by immunofluorescence and by electron microscopy. Typing of the isolates was performed by an immunofluorescence technique.

Sacral ganglions from 26 patients were observed. HSV was recovered from the third sacral ganglion of four patients; three of the isolates were

Type 2 and one was not typed. HSV was also recovered from the fourth sacral ganglion of two of these four patients, but no isolates were obtained from the second sacral ganglion. Thoracic ganglions from 21 patients also gave negative results. Type 1 HSV was recovered from the trigeminal ganglions of one patient who had yielded Type 2 HSV from the third sacral ganglions.

The author suggests that these observations indicate that HSV may commonly exist in human sacral sensory ganglions in a manner analogous to that previously shown for trigeminal ganglions. The significance of the findings is discussed.

J. D. Oriel

Herpes Simplex Viruses: Discrimination of Types and Correlation between Different Characteristics

PLUMMER, G., GOODHEART, C. R., MIYAGI, M., SKINNER, G. R. B., THOULESS, M. E., and WILDY, P. (1974)
Virology, **60**, 206

This paper deals with the degree of clarity and precision with which HSV Types 1 and 2 can be differentiated from each other by a number of criteria. It had been suggested that intermediate strains might exist; if this were so epidemiological studies of these viruses would be of doubtful value. The results of this work indicate, however, that isolates do not form a spectrum but can be clearly placed in one or other of two groups.

Sixty strains of HSV from various sites of isolation (19 from the cervix, 23 from the oropharynx, five from the brain, four from trigeminal ganglia, and nine from other sites) were compared by plaque appearance, neutralization tests, pock sizes on the chorioallantoic membrane of chick embryo, and by stabilities of their infectivity and of their thymidine kinase activities. Twelve isolates were also compared by measuring the buoyant densities of viral DNA. Only one virus of the sixty tested showed intermediate characteristics on the basis of only one criterion, namely thymidine kinase stability.

Differentiation by either plaque appearance, pock size or neutralisation of infectivity all proved equally efficient and simple as discriminatory tests.

P. Reeve

Herpes Genitalis and Aseptic

Meningitis JARRATT, M., and HUBLER, W. R., JR. (1974) *Arch. Derm.*, **110**, 771

This report from Baylor College of Medicine, Houston, USA, describes a 24-year-old man who developed an eruption of grouped vesicles on the penis which was followed 1 week later by a similar eruption on the forehead. After 4 days he developed symptoms of meningitis and was admitted to hospital. HSV Type 2 was recovered on culture from the penile and forehead lesions. Examination of the CSF showed 269 mononuclear leucocytes/cu. mm. and protein 54 mg./100 ml., but CSF cultures for HSV were negative. However, with an indirect immunofluorescence technique, HSV antigen was demonstrated in the CSF leucocytes.

The patient recovered in a few days with symptomatic treatment.

J. D. Oriel

Indirect Hemagglutinating Antibody Response to *Herpesvirus hominis* Types 1 and 2 in Immunized Laboratory Animals and in Natural Infections of Man BACK, A. F., and SCHMIDT, N. J. (1974) *Appl. Microbiol.*, **28**, 392

Variations of Cytotoxic Antibodies to Cells with Herpes Simplex Virus Antigens in Women with Progressing or Regressing Cancerous Lesions of the Cervix THIRY, L., SPRECHER-GOLDBERGER, S., FASSIN, Y., GOULD, I., GOMPEL, C., PESTIAU, J., and DE HALLEUX, F. (1974) *Amer. J. Epidemiol.*, **100**, 251

Stimulation of Peripheral Blood Lymphocytes by Herpes Simplex Virus *in vitro* SCRIBA, M. (1974) *Infect. and Immun.*, **10**, 430

Inhibition of Herpes Simplex Virus Replication by Phosphonoacetic Acid OVERBY, L. R., ROBISHAW, E. E., SCHLEICHER, J. B., RUETER, A., SHIPKOWITZ, N. L., and MAO, J. C.-H. (1974) *Antimicrob. Agents Chemother.*, **6**, 360

Herpesviruses and Oncogenesis KLEIN, G. (1974) *Nature (Lond.)*, **252**, 348

Neonatal Herpes Simplex Infection following Delivery by Cesarean Section LIGHT, I. J., and LINNEMANN, C. C., JR. (1974) *Obstet. and Gynec.*, **44**, 496

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Herpes Simplex Viruses Types 1 and 2. Type and Strain Specific Characteristics affecting Virus Plaque Formation LANCZ, G. J. (1974) *Arch. ges. Virusforsch.*, **46**, 36

Rapid Antigenic Typing of *Herpesvirus hominis* Isolates on the Surface of Infected Cells by Kinetic Binding of ¹²⁵I-labeled HVI Antibodies PIRAINO, F., SEDMAK, G., ALTSHULER, C., and PIERCE, R. (1974) *Amer. J. clin. Path.*, **62**, 581

Typing of Herpes Simplex Virus Strains of Genital and Non-genital Origins KAWANA, T., SHINKAI, K., and YOSHINO, K. (1974) *Jap. J. Microbiol.*, **18**, 235

Herpes Simplex Virus and Human Cytomegalovirus Replication in WI-38 Cells. II. An Ultrastructural Study of Viral Penetration SMITH, J. D., and DE HARVEN, E. (1974) *J. Virol.*, **14**, 945

Public health and social aspects

Epidemiology and Control of Venereal Diseases in Sri Lanka JAYASURIYA, P. L. B. (1974) *J. trop. Med. Hyg.*, **77**, 196

Venereal Diseases among Seamen. Venereal Diseases among Norwegian and Foreign Staff on a Norwegian Cruise Ship in the Caribbean during 2½ years of Sailing DAHL, E. (1974) *T. norske Laegeforen.*, **94**, 2392

Need for Problem-Oriented Venereal Disease Clinics ARMSTRONG, J. H., and WIESNER, P. J. (1974) *J. Amer. vener. Dis. Ass.*, **1**, 23

Miscellaneous

Isolation of *Neisseria* Species from Unusual Sites

GIVAN, K. F., and KEYL, A. (1974) *Canad. med. Ass. J.*, **10**, 1077

After the unexpected recovery of the meningococcus from the urethra of two male patients and the cervix of one female patient attending the VD Clinic in Toronto, a systematic search was made in the throat, urethra, and rectum of 115 consecutive male patients. Gonococci were isolated from the oro-pharynx of four patients, three of whom were asymptomatic, and meningococci from genital sites in six patients, four of whom were asymptomatic. The case histories of these patients are given. It is believed that the meningococcus was sexually transmitted, possibly by oro-genital contact. It is noteworthy that during the period of study there was a significant increase in the number of cases of meningococcal disease in the community. It was also found that sulphonamides are still useful in the prophylaxis against meningococci in this area.

G. W. Csonka

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